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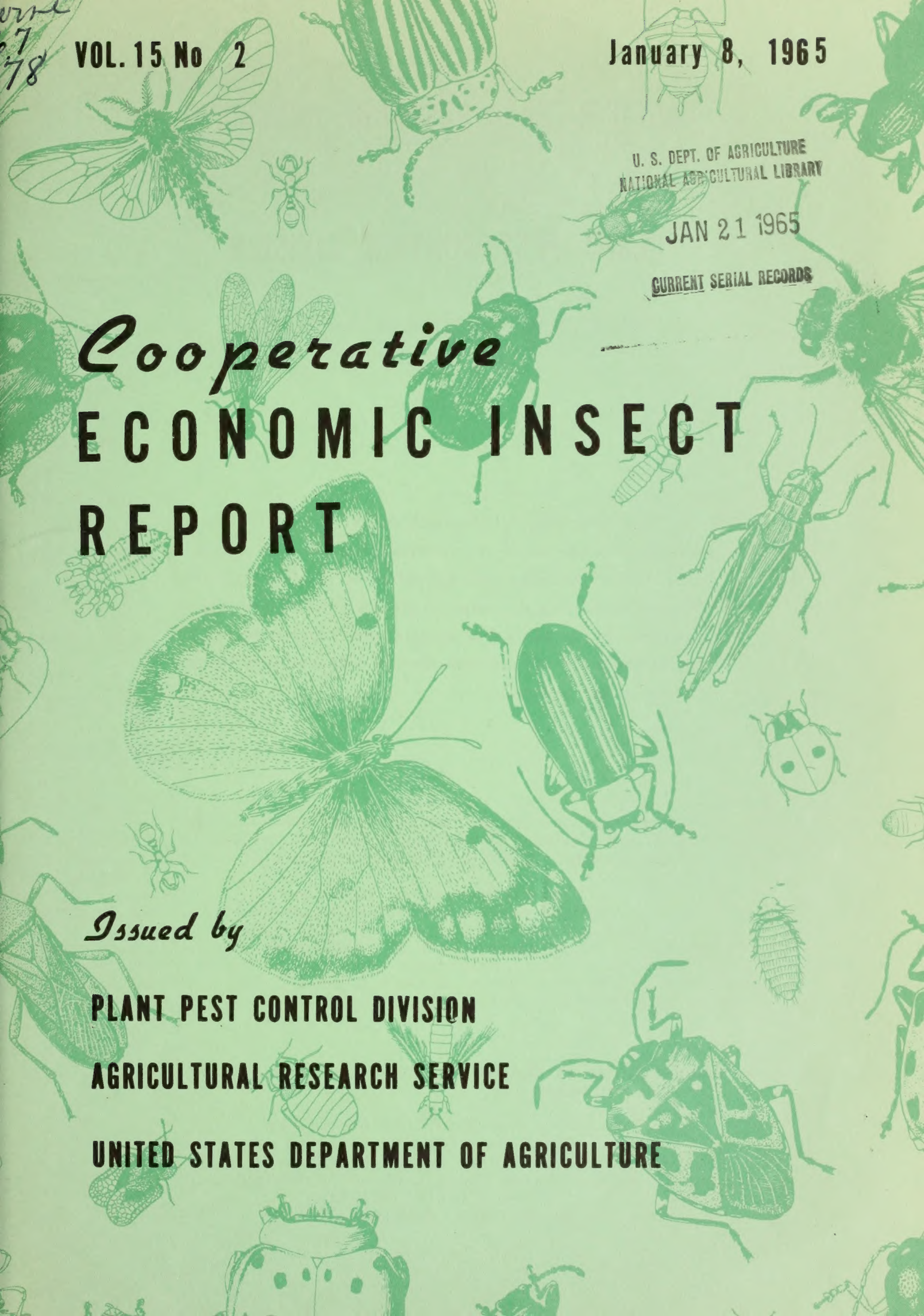

VOL. 15 No 2

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Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 15 January 8, 1965 Number 2

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

CALIFORNIA RED SCALE heavy on orange trees at locations in Yolo and Sutter Counties, adults of a LEAFHOPPER (*Empoasca arida*) heavy on same host in Orange County, and OLIVE SCALE heavy on prune in Sutter County, all in California. (p. 15).

DETECTION

New State records reported included a COSMOPTERIGID MOTH (*Limnaecia phagmitella*) from Delaware (p. 17) and 4 species on ANTS (*Crematogaster minutissima missouriensis*, *Pheidole bicarinata*, *Pheidole morrisii morrisii*, *Trachymyrmex septentrionalis obscurior*) from Arkansas (p. 18). A new county record reported was a JUNIPER TWIG GIRDLER (*Periploca nigra*) from Ventura County, California. (p. 16).

CORRECTIONS

See page 18

SPECIAL REPORTS

Highlights of the Occurrence of Insects and Other Arthropods in Canada, 1964. (pp. 19-21). ARMYWORM outbreak in Eastern Canada first since 1954. Continued infestation of PALE WESTERN CUTWORM during 1965 in Alberta and Saskatchewan Provinces forecast. First records of FACE FLY in Western Canada reported in Manitoba.

Status of the Screw-worm in the Southwest. (p. 21).

Status of the European Corn Borer in 1964. (pp. 22-28). General abundance in North Central States slightly less than in 1963 on the average. Considerable increases in populations, however, noted in portions of Iowa, Kansas and Missouri. Decreases noted in areas of Nebraska, South Dakota, North Dakota and Minnesota.

Reports in this issue are for week ending January 1, unless otherwise indicated.

WEATHER BUREAU'S 30-DAY OUTLOOK

JANUARY 1965

The Weather Bureau's 30-day outlook for January calls for temperatures to average above seasonal normals over the eastern third of the Nation as well as over the Southern Plains. Below normal averages are anticipated for the west coast States, northern and western portions of the Plateau Region, and the northern Plains. In unspecified areas near normal temperatures are in prospect. Precipitation is expected to exceed normal over the Mississippi and Ohio Valleys, the lower Great Lakes Region, and the western quarter of the Nation. Subnormal amounts are called for over western portions of the southern and central Plains as well as the extreme southeast. Elsewhere, near normal amounts are predicted.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D. C. 20250. Price $5.00 a year.

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WEATHER OF THE WEEK ENDING JANUARY 4

Precipitation continued in the flood-stricken Far West but with diminishing amounts. Elsewhere precipitation was widespread but with snow only in the extreme north and in the mountains. Temperatures were very low in Montana but mild in the central and southeast portions of the country.

TEMPERATURE: Arctic air continued its grip over the northern Great Plains where Cut Bank, Montana, had below zero temperatures until Thursday. In much of Montana and some neighboring areas, temperatures have averaged from 10° to 30° below normal during 4 of the last 5 weekly periods. Areas west of the Rockies were 10° to 20° colder than during the previous week while the upper Mississippi Valley was warmer. The central South and the Southeast continued the mild pattern of the previous week.

PRECIPITATION: Precipitation was widespread and frequent and fell mostly as rain except for snow in the western mountains and in the northern one-quarter of the country. Precipitation in the Far West and Northwest was substantial but not excessive for this time of year. The principal dry area extended from eastern New Mexico and northwestern Texas northward through Nebraska while additional large areas had less than 0.25 inch of precipitation. Beneficial rains continued in Illinois, Indiana, and Ohio and there was rain also to the South.

SNOWFALL: While the snowpack continues to grow at a favorable rate in the Sierras and other mountains of the Far West, there has been comparatively less snowfall in the Rockies and along the Continental Divide. The mountains of Washington have snow depths up to 100 to 140 inches at elevations above 3,000 feet. Snow cover has become rather general in New York State and upper New England and continues from the upper Great Lakes area westward through the Dakotas and Montana. Snowfall so far this season has been deficient throughout the Corn Belt and eastward to the Middle Atlantic States. Soil freezing in this area has probably been less than average due to recurrent warm spells or breaks in the cold. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (*Schizaphis graminum*) - OKLAHOMA - Averaged 2 per linear foot in oats in Marshall County, 15 in Kingfisher County, and 1.5 in Jefferson County. Ranged 3-15 per linear foot in wheat in Kingfisher, Major and Garfield Counties. (Okla. Coop. Sur.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - OKLAHOMA - Averaged one per linear foot in oats and wheat in Marshall and Jefferson Counties; ranged 5-10 per linear foot in wheat in Kingfisher, Major and Garfield Counties. (Okla. Coop. Sur.).

APPLE GRAIN APHID (*Rhopalosiphum fitchii*) - OKLAHOMA - Averaged 6 per linear foot in oats in Marshall County, and one per linear foot in wheat in Major County. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (*Macrosiphum avenae*) - OKLAHOMA - Averaged 2-3 per linear foot in oats in Marshall and Jefferson Counties and 4-5 per linear foot in wheat in Major and Kingfisher Counties. (Okla. Coop. Sur.).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - OKLAHOMA - Heavy in corn stalks in Harmon County. (Okla. Coop. Sur.).

WINTER GRAIN MITE (*Penthaleus major*) - OKLAHOMA - Reported in oats and barley in Kingfisher County. (Okla. Coop. Sur.).

A GELECHIID MOTH (*Chionodes psiloptera*) - WASHINGTON - Larvae heavy in grass seed fields near Rockford, Spokane County. (Harwood).

GRASSHOPPERS - OKLAHOMA - Unidentified nymphs reported in meadow in Pawnee County. (Okla. Coop. Sur.).

A WEEVIL (*Hypera brunneipennis*) - ARIZONA - Continues to appear in alfalfa in Yuma County. Few found in fields near Kyrene, Maricopa County. (Ariz. Coop. Sur.).

GREEN PEACH APHID (*Myzus persicae*) - ARIZONA - Small numbers present in alfalfa in the Parker area, Yuma County. (Ariz. Coop. Sur.).

PEA APHID (*Acyrthosiphon pisum*) - WASHINGTON - Averaged 5 per sweep, mostly second and third instars, on alfalfa in Walla Walla and Benton Counties. (Halfhill).

FRUIT INSECTS

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - CALIFORNIA - Heavy on orange trees at Woodland, Yolo County, and at Yuba City, Sutter County. (Cal. Coop. Rpt.).

OLIVE SCALE (*Parlatoria oleae*) - CALIFORNIA - Heavy on leaves and twigs of prune at Yuba City, Sutter County. (Cal. Coop. Rpt.).

A LEAFHOPPER (*Empoasca arida*) - CALIFORNIA - Adults heavy on orange trees at Irvine, Orange County. (Cal. Coop. Rpt.).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - OKLAHOMA - Light in pecan shucks in Payne County. (Okla. Coop. Sur.).

TRUCK CROP INSECTS

CABBAGE APHID (*Brevicoryne brassicae*) - ALABAMA - Light to heavy on cabbage and collards; few adults and larvae of *Hippodamia convergens* (convergent lady beetle) feeding on aphids. (Barwood).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - OKLAHOMA - Field dissection of untreated trees in Payne County revealed 25 percent of all damaged tips infested with live pupae. All other damaged tips contained dead pupae or larvae. (Okla. Coop. Sur.).

A BARK BEETLE (*Pityophthorus* sp.) - NEW MEXICO - Light on ponderosa pine near Vallecitos, Rio Arriba County. (N.M. Coop. Rpt.).

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*) - NEW MEXICO - Damaging American elm trees at Artesia, Eddy County, and American elm nursery stock at Albuquerque, Bernalillo County. (N.M. Coop. Rpt.).

A CLEARWING MOTH (*Paranthrene robiniae*) - CALIFORNIA - Larvae heavy in trunk of California sycamore at El Cajon, San Diego County. (Cal. Coop. Rpt.).

A JUNIPER TWIG GIRDLER (*Periploca nigra*) - CALIFORNIA - Larvae and pupae heavy in twigs of junipers at Newbury Park, Ventura County. (Cal. Coop. Rpt.). This is a new county record. (PPC).

A BUPRESTID BEETLE (*Chalcophora virginiensis*) - FLORIDA - Adults light on one percent of 5,000 gardenias (*Gardenia jasminoides*) at Apopka, Orange County. (Musgrove, Dec. 14).

A BARK BEETLE (*Xylosandrus compactus*) - FLORIDA - Taken on stem of flowering dogwood (*Cornus florida*) at Cresent City, Putnam County. (A. E. Graham, Dec. 16).

A CERAMBYCID BEETLE (*Leptostylus tuberculatus*) - FLORIDA - Adults light on *Rosa* sp. at Ocala, Marion County. (Robertson).

COTTONY-CUSHION SCALE (*Icerya purchasi*) - ARIZONA - Few infestations noted on pittosporum in Phoenix area, Maricopa County. Only few live specimens found due to presence of *Rodolia cardinalis* (vedalia). (Ariz. Coop. Sur.).

Coccids in Florida - *Aspidiotus cyanophylli* adults moderate on leaves of bottlebrush (*Callistemon* sp.) at Marathon Shores, and all stages of *A. spinosus* light on stem, leaves and blooms of loquat (*Eriobotrya japonica*) at Marathon, Monroe County. (Dowling, Knowles, Dec. 16). All stages of *A. lataniae* moderate on stem of azalea at Cypress Gardens, Polk County. All stages of *Pseudoparlatoria parlatorioides* severe on leaves of *Tibouchina* sp. at same location; this is a new host record for the Florida Division of Plant Industry. (Burnett, J. C. Denmark, Norton, Seymour; Dec. 17). All stages of *Phenacaspis cockerelli* severe on English ivy (*Hedera helix*) at Ocoee, Orange County. (Griffith, Dec. 17).

AN ERIOPHYID MITE (*Floracarus* sp.) - FLORIDA - Localized on leaves of *Ilex glabra* at Fruitland, Putnam County. Det. by H. H. Keifer. (Graham, Dec. 10).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE LICE - UTAH - Becoming more troublesome in some herds in eastern Box Elder County (Knowlton); increasing in Carbon County (Knowlton, Horne).

FLEAS (*Ctenocephalides* spp.) - OKLAHOMA - Heavy on dogs in Creek County. (Okla. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*) - OKLAHOMA - Reported infesting stored food products in Payne County home. (Okla. Coop. Sur.).

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - A nuisance on a property at Towson, Baltimore County. (U. Md., Ent. Dept., Dec. 26).

EARWIGS - ARIZONA - Still a pest in homes in Maricopa and Pinal Counties, especially during very cool weather. (Ariz. Coop. Sur.). ALABAMA - Adults numerous and annoying in lawns and gardens throughout Lee County. (Barwood).

BLACK CRICKETS - UTAH - Common in basements of homes and school in Clarkston, Cache County. (Knowlton).

MILLIPEDS - MARYLAND - Undetermined species have appeared in homes in Prince Georges and Queen Annes Counties. (U. Md., Ent. Dept.).

A SUBTERRANEAN TERMITE (Reticulitermes tibialis) - NEW MEXICO - Heavy infestations found at Roswell, Chaves County, early during 1964 identified as this species by T. E. Snyder. (N.M. Coop. Rpt.).

STORED-PRODUCT INSECTS

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - FLORIDA - Found in stored pistachio nuts (Pistacia vera) at Pensacola, Escambia County (T. W. Boyd, Dec. 11); in boxes of pancake flour at Ocala, Marion County (W. O. Robertson, Dec. 24); and in sacks of wheat hulls at Winter Garden, Orange County (R. J. Griffith).

CIGARETTE BEETLE (Lasioderma serricorne) - FLORIDA - At Winter Haven, Polk County, adults taken on stored cottonseed meal (Risk, Dec. 24) and on stored cottonseed protein (West).

A DERMESTID BEETLE (Trogoderma parabile) - CALIFORNIA - Larvae heavy in farm-stored grain and vegetable seed at Blythe, Riverside County. (Cal. Coop. Rpt.).

CADELLE (Tenebroides mauritanicus) - OKLAHOMA - Moderate numbers found in stored wheat in Mayes County. (Okla. Coop. Sur.).

A WEEVIL (Ceutorhynchus convexicollis) - NEW MEXICO - Noted in farm-stored wheat near Clovis, Curry County. Det. by G. B. Vogt. (N.M. Coop. Rpt.).

A BRUCHID (Bruchus sp.) - FLORIDA - Found in stored grain at Crescent City, Putnam County. (A. E. Graham, Dec. 17).

BENEFICIAL INSECTS

LADY BEETLES - ARIZONA - Rodolia cardinalis (vedalia) controlled cottony-cushion scale (Icerya purchasi) on pittosporum in the Phoenix area, Maricopa County. (Ariz. Coop. Sur.). ALABAMA - Hippodamia convergens (convergent lady beetle) adults and larvae feeding on Brevicoryne brassicae (cabbage aphid) in cabbage and collard fields. (Barwood).

GREEN LACEWINGS (Chrysopa spp.) - OKLAHOMA - Averaged 0.75 per linear foot in wheat in Jefferson County, and 1.5 per linear foot in oats in Marshall County. Moderate on pine trees in Payne County throughout December. (Okla. Coop. Sur.).

MISCELLANEOUS INSECTS

A COSMOPTERIGID MOTH (Limnaecia phagmitella) - DELAWARE - Adults collected at light by D. F. Bray at Newark, New Castle County, on July 1, 1963. This is a new State record. Det. by R. W. Hodges. (Burbutis).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - ALABAMA - Flight observed in Lee County, where daytime temperature was 70 degrees. (Barwood).

Ants in Arkansas - Special ant survey conducted during 1964. Total of 306 ant collections made; 5 subfamilies, 19 genera and 38 species represented. New State records were *Crematogaster minutissima missouriensis* Emery, *Pheidole bicarinata* Mayr, *Pheidole morrisii morrisii* Forel and *Trachymyrmex septentrionalis obscurior* (Wheeler). This brings to 77 the total number of ant species known to occur in the State. (Ark. Ins. Sur.).

CORRECTIONS

CEIR 14(41):1136 - Under Plant bugs - Megalocerola recticornis should read Megalocer*aea* recticornis.

CEIR 14(52):1305 - FLORIDA - Alfalfa 12-24 inches should read 12-*14* inches.

CEIR 14(52):1309 - A PYRALID MOTH (Aglossa cuprealis) should read Aglossa c*a*prealis.

CEIR 15(1):7 - LIGHT TRAP COLLECTIONS - End of line 2 from bottom - P. quadrimaculata should read P. *quinque*maculata.

BLACKLIGHT TRAP COLLECTIONS

FLORIDA - Gainesville (Dec. 12) - *Feltia subterranea* (granulate cutworm) 3; *Agrotis ipsilon* (black cutworm) 1; *Peridroma saucia* (variegated cutworm) 1; *Pseudaletia unipuncta* (armyworm) 1.

GEORGIA - Tifton (Dec. 10-16; temperature range 30-71° F.; precipitation 0.8 inch) (Dec. 17-23; temperature range 29-71; precipitation 0.5 inch) - No specimens of the following collected during either period: *Heliothis zea* (corn earworm), *H. virescens* (tobacco budworm), *Protoparce quinquemaculata* (tomato hornworm), *P. sexta* (tobacco hornworm).

SOUTH CAROLINA - Charleston (Dec. 21-27) (precipitation 0.73 inch) (temperature range 34-69° F.) - *Pseudaletia unipuncta* 3, *Agrotis ipsilon* 4, *Feltia subterranea* 11; *Spodoptera frugiperda* (fall armyworm), *Prodenia ornithogalli* (yellow-striped armyworm), *Peridroma saucia*, *Heliothis zea*, *H. virescens*, *Protoparce sexta*, *P. quinquemaculata*, *Estigmene acrea* (salt-marsh caterpillar) and *Trichoplusia ni* (cabbage looper) all zero.

HIGHLIGHTS OF THE OCCURRENCE OF INSECTS AND OTHER ARTHROPODS IN CANADA, 1964

C. Graham MacNay

The following are some of the more important records of arthropod pests in Canada in 1964.

In the Prairie Provinces, generally, GRASSHOPPERS were less numerous and less injurious than in 1963. In Alberta, fairly large numbers occurred south and east of Lethbridge, but the amount of insecticide used in the Provinces was only one-quarter that of 1963. In agricultural areas of Saskatchewan, the smallest population in many years, reduced 21 percent in numbers and 20 percent in area of infestation compared with 1963, caused only minor, marginal defoliation. *Entomophthora* sp., a fungus, was virtually absent, but in eastern areas, larvae of *Sarcophaga* sp. (a sarcophagid fly) killed many adults. In Manitoba, a grasshopper adult survey indicated an increase in the area of infestation of approximately 1,000 square miles and a two-fold increase in severity, in comparison with conditions in 1963. Timely rains and good growing conditions minimized damage, but some head clipping and leaf stripping occurred in heavily infested areas.

In the lower Fraser Valley, British Columbia, VARIEGATED CUTWORM (*Peridroma saucia*) severely infested sugar beet seed crops. In Alberta, infestation by PALE WESTERN CUTWORM (*Agrotis orthogonia*) was the most widespread in 15 years, southern areas being most severely affected. In Saskatchewan, most damage occurred in south central and west central areas, but was considerably less than in 1963. Continued infestation in 1965 in both Provinces is forecast. Damage by RED-BACKED CUTWORM (*Euxoa ochrogaster*) was light in both Provinces and ARMY CUTWORM (*Chorizagrotis auxiliaris*), widely distributed in unusual outbreak numbers in 1963, was not reported. Local outbreaks of BERTHA ARMYWORM (*Mamestra configurata*) occurred again in the Vermilion area of Alberta.

In Manitoba, ARMYWORM (*Pseudaletia unipuncta*) was recorded for the first time since 1954, but infestation was limited to a couple of fields. In Eastern Canada, however, an outbreak occurred, the first since 1954. Control measures were widely employed and parasitism was generally high. Damage in Ontario, mainly to oats, mixed grain, and corn, ranged up to 50 percent in some plantings; but even in extreme southwestern areas, the most severely infested, total losses did not exceed 2 percent. A survey in Quebec revealed infestation in 47 counties, the greatest numbers being in the Eastern Townships. Damage, mainly to oats, was generally spotty, but severe in local areas. In New Brunswick, infestation was moderate to severe and crop losses ranged to 100 percent in some areas where insecticides were not applied. In Nova Scotia, infestation was generally severe and damage, chiefly to oats, was extensive. In a few areas, a polyhedrosis virus was prevalent. In Prince Edward Island, most severe infestations occurred in central and eastern areas. Spotty damage ranged to 80 percent in some fields, but overall losses were light. In Newfoundland, severe infestations reduced stands of timothy hay and oats up to 50 percent in some areas.

In southwestern Ontario, unusually large numbers of CUTWORMS, other than armyworm, caused extensive damage to corn, sugar beets, white beans, soybeans and tobacco. Early cabbage, cucumbers and tomatoes were commonly damaged in the Province.

In west central Alberta and the Peace River area, many wheat and barley crops appeared patchy because of broken stalks. Pupae found within the stems and in depressions at the base of leaf sheaths on the outside were identified as Syrphidae (probably *Syrphus* sp.) which were associated with large populations of aphids. In the Parairie Provinces, WHEAT STEM SAWFLY (*Cephus cinctus*) caused the most damage in many years, marginal damage ranging up to 50-80 percent in Saskatchewan. HESSIAN FLY (Phytophaga destructor), much less numerous than in 1963, caused little damage. In a survey of northern and eastern Saskatchewan, a BARLEY THRIPS (Limothrips denticornis) was found in every field of barley examined but damage was negligible. In northeastern areas, seedling rape was severely injured by FLEA BEETLES. DIAMONDBACK MOTH (Plutella maculipennis), widely distributed on rape, caused little significant injury. SWEETCLOVER WEEVIL (Sitona cylindricollis) severely defoliated seedling clover adjacent to second-year stands in many areas. In Manitoba, WHEAT STEM MAGGOT (Meromyza americana) increased considerably, causing up to 3 percent damage in some fields of wheat. In southwestern Ontario, GREEN CLOVERWORM (Plathypena scabra) fed heavily on white beans and soybeans. On corn, CORN LEAF APHID (Rhopalosiphum maidis) was abundant; NORTHERN CORN ROOTWORM (Diabrotica longicornis) was numerous, causing some damage; and EUROPEAN CORN BORER (Ostrinia nubilalis), with a few exceptions, caused very little damage. In Prince Edward Island, BARLEY JOINTWORM (Harmolita hordei) was scarce.

In the lower Fraser Valley, British Columbia, ROOT MAGGOTS on cruciferous vegetables and onions, and CARROT RUST FLY (Psila rosae) on carrots, caused major crop losses, mainly because of insecticide resistance. PEA APHID (Acyrthosiphon pisum) was abundant and at Cloverdale NORTHERN ROOT-KNOT NEMATODE (Meloidogyne hapla) was found on carrots. In the Kamloops area, EUROPEAN EARWIG (Forficula auricularia) was unusually numerous and GARDEN SYMPHYLAN (Scutigerella immaculata) damaged strawberry and vegetables in a local garden, the first record in the interior of the Province. GREEN PEACH APHID (Myzus persicae) was scarce and associated leaf roll of potatoes at lowest incidence in 4 years. In the Williams Lake and Quesnel areas, TUBER FLEA BEETLE (Epitrix tuberis) continuted to spread. In the Prairie Provinces, major garden pests included DIAMONDBACK MOTH, IMPORTED CABBAGEWORM (Pieris rapae), ROOT MAGGOTS (Hylemya spp.) and FLEA BEETLES. In market gardens in Winnipeg, Manitoba, GRAY GARDEN SLUG (Deroceras reticulatum) was a major pest. In Ontario, severe damage was caused by ROOT MAGGOTS (Hylemya spp.) in late cabbage and rutabagas, SEED-CORN MAGGOT (H. platura) in corn and field beans, and by MEXICAN BEAN BEETLE (Epilachna varivestis), which continued to spread northward. For the first time, damage to rutabagas by FLEA BEETLE larvae was of economic proportions in southwestern areas of Ontario and Quebec. In the latter area, too, unusual damage to onions by ONION THRIPS (Thrips tabaci) was recorded, a red-headed FLEA BEETLE (Systena frontalis) was abundant on lettuce, and WIREWORM damage to potatoes was unusually light. In New Brunswick, CABBAGE MAGGOT (Hylemya brassicae) severely damaged late cabbage and cauliflower and POTATO STEM BORER (Hydroecia micacea) injured rhubarb. In Prince Edward Island, turnips, for the first time, were extensively attacked by PURPLE-BACKED CABBAGEWORM (Evergestis pallidata). Potato pests were scarce. In Newfoundland, SLUGS in gardens and CABBAGE MAGGOT in cruciferous crops were very injurious.

In the lower Fraser Valley, British Columbia, a LEAF ROLLER (Dasystoma salicellum), first recorded in 1958, had become a major pest of blueberry, and a ROOT WEEVIL (Trachyphloeus bifoveolatus) extensively damaged a planting of strawberries. In the Okanagan Valley, PEAR PSYLLA (Psylla pyricola), difficult to control, was quite injurious and was recorded for the first time on Vancouver Island in an infestation near Victoria. Also on the Island, harvested loganberries were infested by larvae of ORANGE TORTRIX (Argyrotaenia citrana) and ripe strawberries by OMNIVOROUS LEAF TIER (Cnephasia longana). In Manitoba, SPIDER MITES were unusually injurious to raspberry and strawberry. In unusual abundance in southwestern Ontario were APPLE APHID (Aphis pomi) on apple generally, CECROPIA MOTH (Hyalophora cecropia) on various hosts, and FRUIT FLIES (Rhagoletis spp.) in cherry in the Niagara Peninsula. EUROPEAN RED MITE (Panonychus ulmi) was unusually scarce, except on plum, in the Niagara Peninsula, but in Norfolk County, populations were the largest on record. On strawberry, TARNISHED PLANT BUG (Lygus lineolaris) and CYCLAMEN MITE (Steneotarsonemus pallidus) were common. In southwestern Quebec, WOOLLY APPLE APHID (Eriosoma lanigerum), normally a minor pest, was generally abundant. MITES, OYSTERSHELL

SCALE (Lepidosaphes *ulmi*), APPLE MAGGOT (*Rhagoletis pomonella*) and a LEAF BLOTCH MINER (*Lithocolletis blancardella*) were major orchard pests. In Nova Scotia, adults of STRAWBERRY ROOT WEEVIL (*Brachyrhinus ovatus*), in an unusual infestation, stripped the bark and foliage from several acres of newly budded apple trees.

Other occurrences of note included: In British Columbia, outbreaks of TICK PARALYSIS in cattle, involving many fatalities, and 2 cases in humans, one fatal; on Vancouver Island, severe infestations of a BUD MOTH (*Rhopobota naevana ilicifoliana*) on holly; in Manitoba, first records of FACE FLY (*Musca autumnalis*) in Western Canada, and in the Lyleton area, severe infestations of FALL CANKERWORM (*Alsophila pometaria*); in Ontario, adaptation of LESSER MEALWORM (*Alphitobius diaperinus*) to "deep litter" practices recently adopted by poultrymen; in Ontario and Quebec, unusual damage by larvae of MOURNING-CLOAK BUTTERFLY (*Nymphalis antiopa*), and live adults of a WEEVIL (*Cleonus piger*) numerous on bagged field beans in Quebec and in combined oats in the Niagara Peninsula; in Eastern Canada, LARDER BEETLE (*Dermestes lardarius*) increasingly abundant in dwellings infested by FACE FLY and CLUSTER FLY (*Pollenia rudis*).

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

No cases of screw-worm were reported in the Southwestern Eradication Area nor in ARIZONA during the period December 27, 1964-January 2, 1965. Total of 52 cases was reported in the Republic of Mexico: Sonora 44, Chihuahua 4, Durango 2, and 1 each in Tamaulipas and San Luis Potosi. Sterile screw-worm flies released: Texas 23,554,250, New Mexico 2,720,000, Arizona 4,960,000, and 50,372,000 in Mexico.

	Positive Cases		Negative Cases		Ratio of Positive Cases to 100 Cases Negative	
Year	Current	Cumulative	Current	Cumulative	Current	Cumulative
	Table 1. Comparison of specimens reported during corresponding weeks in 1963 and 1964 in Southwestern Eradication Area.					
1963	6	6	18	18	33.33	33.33
1964	0	0	16	16	0.0	0.0
1965	0	0	45	45	0.0	0.0
	Table 2. Comparison of specimens reported during corresponding weeks and in a corresponding area in 1964 in the United States-Mexico Barrier Zone.*					
1964	28	28	7	7	400.00	400.00
1965	49	49	14	14	350.00	350.00
	Table 2A. Mexican portion of Barrier Zone only.					
1964	28	28	3	3	933.33	933.33
1965	49	49	4	4	1,225.00	1,225.00

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* Barrier Zone - Area in which screw-worm eradication operations are being carried out in an effort to prevent establishment of self-sustaining screw-worm population in the United States. (Anim. Dis. Erad. Div.).

STATUS OF THE EUROPEAN CORN BORER IN 1964[1]

Introduction: Cooperating agricultural agencies in 15 States reported on surveys conducted in their States to determine the abundance and distribution of European corn borer (Ostrinia nubilalis (Hübner)) in 1964. All survey data, summaries or records of field observations were submitted to Survey and Detection Operations in Hyattsville, Maryland, for final processing. Personnel of Entomology Research Division, Agricultural Research Service, kindly reviewed the material after completion.

The 1964 European corn borer survey was conducted during the late summer and fall of the year. The survey is designed to measure the fall population of European corn borer larvae and is conducted during a time to include a high percentage of late instars, wherever possible. In all cases, except for some minor differences in compiling data, the accepted survey methods were followed. The survey was continued on a district basis whenever possible in 1964. A district is usually a group of counties within a State, in most cases based on Crop Reporting Districts.

New Distribution: European corn borer was reported for the first time from only 5 new counties during 1964 according to ARS records; however, these new counties were found in States already known to be infested. This was a considerable decrease from the number of new counties reported the previous year; 25 new counties were reported in 1963. This compares with 4 new counties reported in 1962, 15 in 1961, 6 in 1960 and 13 in 1959.

The new counties reported infested during 1964 were Talladega County, Alabama; Franklin County, Georgia; and Durham, Jones and New Hanover Counties, North Carolina.

Abundance: The general abundance of European corn borer larvae in the North Central States was slightly less than in 1963 on the average. The number of borers per 100 plants averaged 82 in 1964 compared with 113 in 1963. Considerable increases in populations, however, were noted in north-northcentral and south-southcentral Indiana, southeast, southwest and northwest Iowa, northeast and east central Kansas, and in northwest and particularly southeast Missouri. The greatest increase in borer population was in the southeastern part of Missouri where the average number of borers per 100 plants was 745 compared with 223 in 1963. Population levels in Illinois were highest in the northwest and west districts, with a decrease in the northeast; counts over the State were slightly less than in 1963. A considerable decrease in borer numbers was noted in northeast Nebraska, with a general decrease occurring over the State; decreases also were noted in southeast South Dakota and southeast North Dakota. Noticeable decreases were encountered in west central, southwest and south central Minnesota during the 1964 survey. In only 4 districts in the North Central States were counts over 200 borers per 100 plants. These districts were as follows: Iowa - District IV (224), District X (208), District XII (203); Missouri - District IX (745).

Populations continued below 100 borers per 100 plants in the Eastern States reporting, although some increase was noted in Delaware, particularly in Sussex County. In Arkansas, the European corn borer population increased slightly, especially in the northeast.

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[1] Survey data provided by State agricultural agencies. Data compiled and summarized by Survey and Detection Operations, Plant Pest Control Division, Agricultural Research Service, United States Department of Agriculture.

Table 1 - Summary by States of European Corn Borer Abundance in Corn, Fall of 1964, Compared with Data for 1963.

States	1963			1964			Comparable Districts or Counties Surveyed Both Years		
	No. of Districts Surveyed	Average No. of Borers Per 100 Plants	No. of Counties Surveyed	No. of Districts Surveyed	Average No. of Borers Per 100 Plants	No. of Counties Surveyed	Number	Borers Per 100 Plants 1963	Borers Per 100 Plants 1964
Eastern									
Delaware	1	77	3	1	98	3	1	77	98
Maryland	3	74	21	3	59	21	3	74	59
Total	4		24	4		24			
Average 1/								75 2/	78
North Central									
Illinois	7	95	35	7	96	37	7	95	91
Indiana	12	36	92	12	60	92	12	36	60
Iowa	12	160	99	12	151	99	12	160	151
Kansas	3	43	25	3	93	25	3	43	93
Minnesota	7	90	71	7	31	67	7	90	31
Missouri	7	76	33	7	172	42	7	76	172
Nebraska	7	206	72	7	84	74	7	206	84
North Dakota	1	391	5	1	125	5	1	391	125
Ohio	5	15	33	5	25	33	5	15	25
South Dakota	6	107 3/	45	6	58 3/	35	6	107 3/	58 3/
Wisconsin	9	21	58	9	13	58	9	21	13
Total	76		568	76		567			
Average 1/								113	82
Southern									
Arkansas	4	13	21	4	30	22	4	13	30
Other									
Michigan	1	26	18	1	35	32			

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1 - Weighted averages based on districts surveyed.

2 - Average for 1963 adjusted.

3 - Average based on 35 counties.

Table 2 - European Corn Borer Abundance in Corn, Fall of 1964, Compared with Data for 1963

State (Districts or Counties)	Average Number of Borers Per 100 Plants	
	1963	1964
Arkansas (Ark. Ins. Sur.)		
Northwest	10	11
North Central	11	10
Northeast	12	62
East Central	19	37
Average	13	30
Delaware (Agr. Expt. Sta.)		
Kent	94	65
New Castle	66	51
Sussex	72	177
Average	77	98
Illinois (Natural History Survey, Ext. Ser.)		
Northwest	207	183
Northeast	116	90
West	150	133
Central	89	70
East	50	91
West-southwest	27	51
East-southeast	23	18
Average	95 (106)1/	91 (95)1/
Indiana (Ext. Ser., Expt. Sta.)		
North-northwest	72	94
North-northcentral	46	102
North-northeast	46	52
Northwest	18	41
North Central	14	33
Northeast	16	35
Southwest	50	32
South Central	18	12
Southeast	16	40
South-southwest	62	96
South-southcentral	39	119
South-southeast	32	63
Average	36	60
Iowa (State Dept. of Agr.; Ext. Ser.; Ent. Dept, Iowa State Univ.; ENT, ARS, USDA)		
District I	279	165
District II	227	71
District III	54	108
District IV	185	224
District V	263	142
District VI	86	103
District VII	181	174
District VIII	73	135
District IX	179	145
District X	119	208
District XI	106	150
District XII	168	203
Average	160	151
Kansas (Ins. Sur.)		
Northeast	23	135
North Central	84	14
East Central	21	131
Average	43	93
Maryland (Agr. Ext. Ser., Ins. Sur.)		
Eastern Shore	94	81
Southern area	56	48
Western and Central areas	71	49
Average	74	59
Michigan (Ins. Sur.)		
Surveyed Counties	26	35
(Survey in 1963 conducted in 18 counties; survey in 1964 conducted in 32 counties)		

1/ Average based on 36 counties rather than districts

Table 2 - (Continued)

State (Districts or Counties)	Average Number of Borers Per 100 Plants 1963	1964
Minnesota (State Dept. Agr.)		
Northwest	59	43
West Central	200	52
Central	57	15
East Central	25	8
Southwest	117	62
South Central	132	35
Southeast	42	4
Average	90	31
Missouri (Ext. Ser., Ins. Sur.)		
District I	93	125
District II	68	78
District III	46	54
District IV	18	63
District V	72	61
District VI	9	81
District IX	223	745
Average	76	172
Nebraska (Agr. Expt. Sta., Ext. Ser., Ins. Sur.)		
North	201	26
Northeast	320	98
Central	233	109
East	268	191
South	218	63
Southeast	169	93
Southwest	35	8
Average	206	84
North Dakota (State Dept. Agr.)		
Southeast	391	125

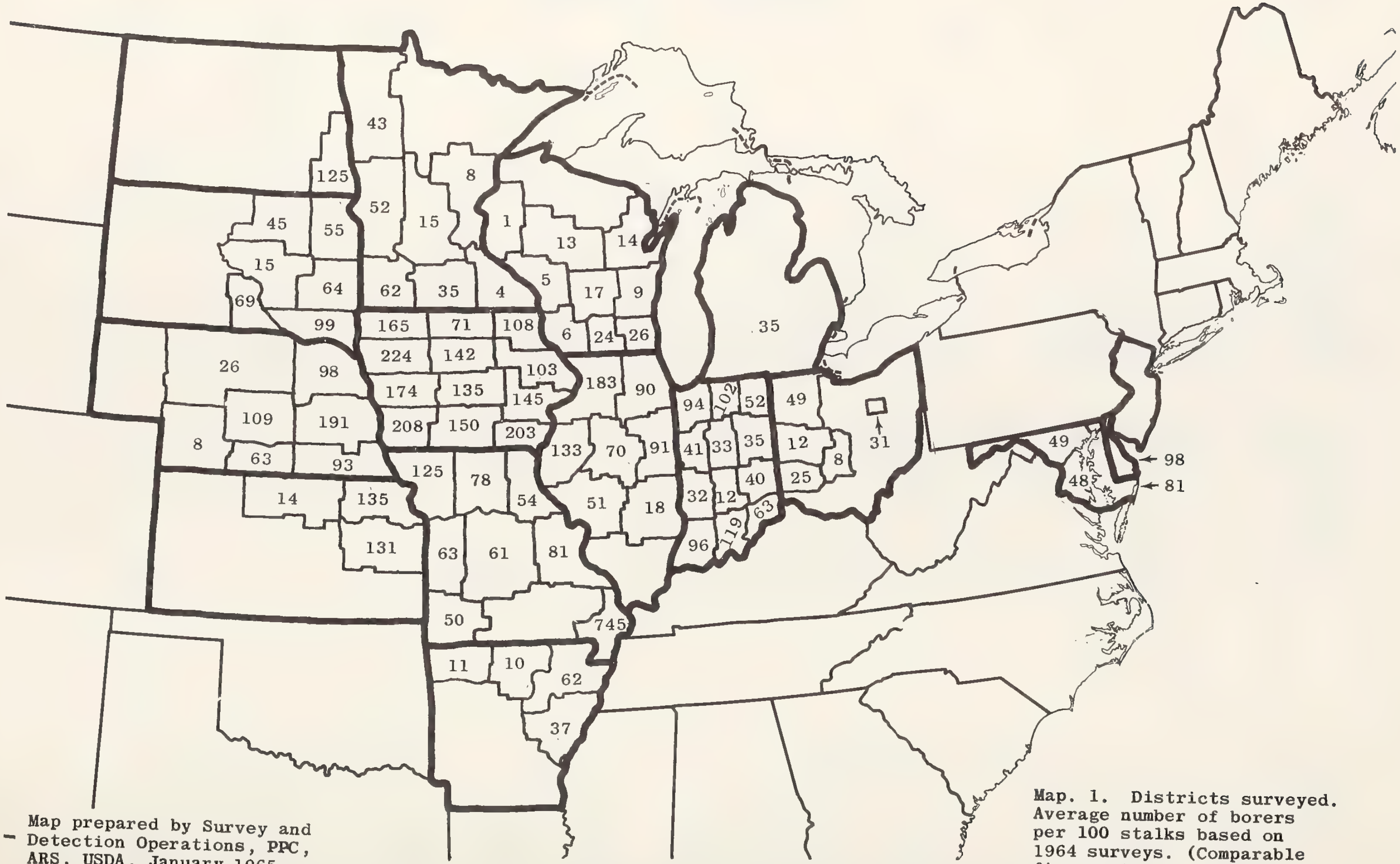
State (Districts or Counties)	Average Number of Borers Per 100 Plants 1963	1964
Ohio (Ext. Ser., ARS, USDA)		
Northwest	36	49
West Central	14	12
Central	7	8
Southwest	9	25
Northeast	8	31
Average	15 (26)1/	25 (28)1/
South Dakota (Agr. Expt. Sta., Ext. Ser.)		
North Central	52	45
Northeast	75	55
Central	100	15
East Central	118	64
Southeast	260	99
South Central	72	69
Average	113 2/	58 2/
Wisconsin (State Dept. Agr.)		
Northwest	19	1
North Central	29	13
West Central	37	5
Central	21	17
Southwest	28	6
South Central	33	24
Southeast	7	26
East Central	4	9
Northeast	8	14
Average	21	13

1/ Average based on all samples rather than district averages.

2/ Average based on 35 counties.

EUROPEAN CORN BORER ABUNDANCE

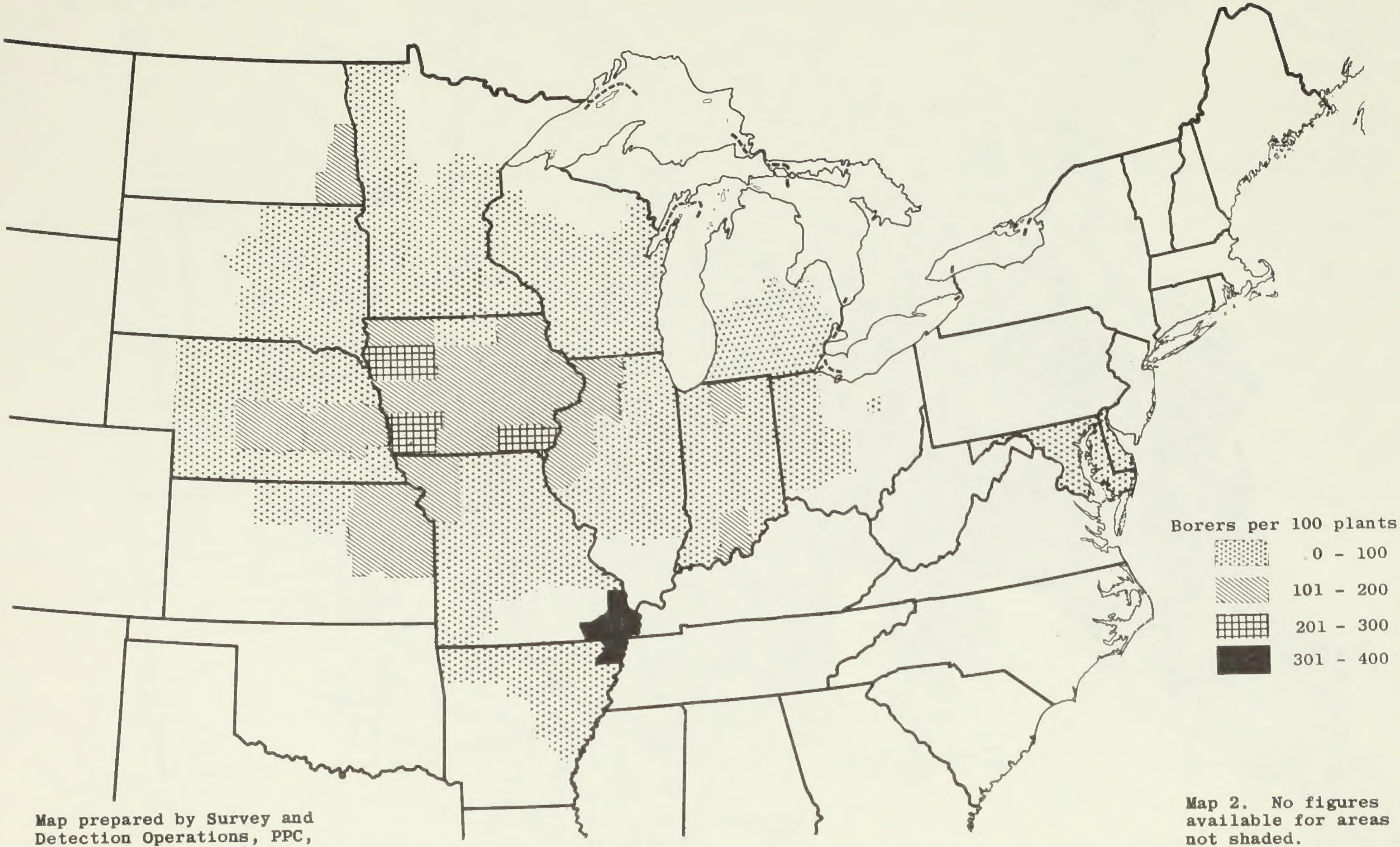
FALL 1964



Map prepared by Survey and
Detection Operations, PPC,
ARS, USDA, January 1965

Map. 1. Districts surveyed. Average number of borers per 100 stalks based on 1964 surveys. (Comparable figures in Table 2).

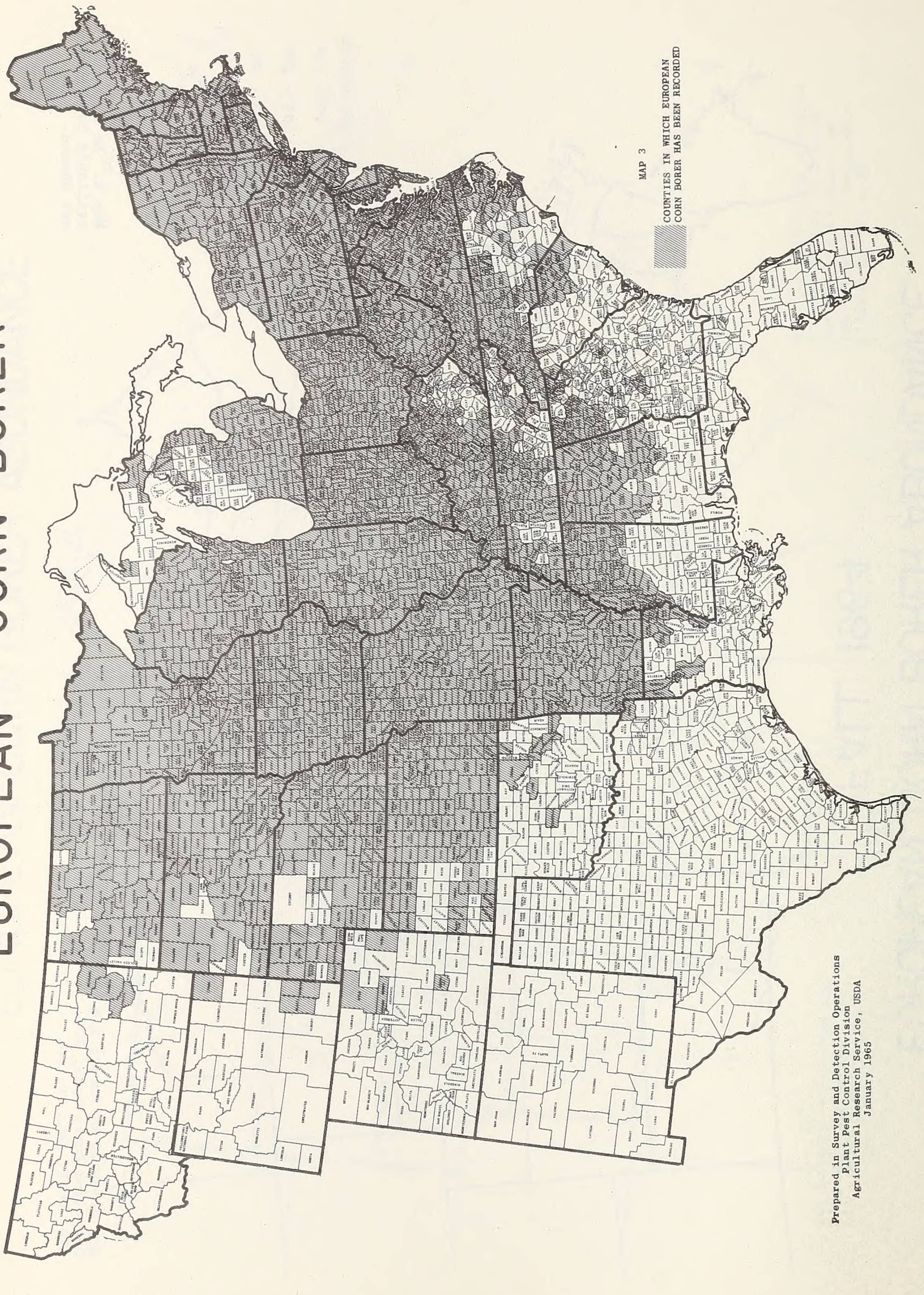
EUROPEAN CORN BORER ABUNDANCE
FALL 1964



Map prepared by Survey and
Detection Operations, PPC,
ARS, USDA, January 1965

Map 2. No figures available for areas not shaded.

EUROPEAN CORN BORER



MAP 3

▨ COUNTIES IN WHICH EUROPEAN CORN BORER HAS BEEN RECORDED

Prepared in Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service, USDA
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UNITED STATES DEPARTMENT OF AGRICULTURE
Hyattsville, Maryland 20781

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